Lunar CRater Observation and Sensing Satellite

LCROSS

The LCROSS mission directs the 2000-kg launch vehicle upper stage to a permanently shadowed region of a lunar pole. After separating from the rocket stage, the Shepherding Spacecraft observes the impact and debris cloud with cameras and spectrometers to detect water concentrations down to a level of 0.5% and measure this value with a factor of two uncertainty accuracy. The Spacecraft then follows the upper stage to the lunar surface and becomes a 600-kg+ secondary impactor. Both impacts will be visible to Earth and lunar orbiting instruments.

Launch Vehicle Upper Stage Impactor

Lunar Gravity Assist Lunar Return Orbit (LGALRO) followed by LCROSS Spacecraft

Cameras and Spectrometers mounted on the Shepherding Spacecraft

NASA-Ames Research Center is managing the development of the LCROSS mission. The Shepherding Spacecraft is being developed by Northrop Grumman. Spacecraft components from the Lunar Reconnaissance Orbiter Project are being used, along with instruments and components from other companies.

LCROSS